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ABSTRACT

The West Tennessee Research Develpment Consortium was formed to increase research potential in 2 developing West Tennessee colleges: Freed-Hardeman College and Lane College. The research development program sought to train in research methodology 1 person on each campus and to offer concurrently an in-service training program to 8 faculty members on each campus. The training program aimed to upgrade teaching and review research proposal writing, instructional processes, research methods, and implications of research for developing institutions. The 16 selected faculty members met 2 hours weekly during the fall semester of 1969-70 and at irregular intervals during the second semester to develop new curriculum materials and receive experimental instruction. The group were evaluated by students through 2 rating instruments: the Purdue Rating Scale for Instruction and the Stanford teacher Competence Appraisal Guide. Results showed only a few instances of significant differences--all of them negative--on the 2 rating scales when comparing the difference scores of the faculty groups. However, although the data indicated the instructional changes made little apparent difference, it was recommended that a program of this type be continued. (JS)

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FINAL REPORT

Project No. 7-D-048X

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WEST TENNESSEE RESEARCH DEVELOPMENT CONSORTIUM

June, 1970

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WEST TENNESSEE RESEARCH DEVELOPMENT CONSORTIUM

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June, 1970

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West Tennessee Research Development Consortium

SUMMARY

The West Tennessee Research Development Consortium was formed to increase research potential in two developing West Tennessee colleges: Freed-Hardeman College, Henderson, Tennessee, and Lane College, Jackson, Tennessee. The Consortium consisted of a proposal and project designed (1) to train in research methodology one person on each of the two college campuses (whose student bodies average 900), and (2) to offer concurrently an in-service training program to eight faculty members in each of these two colleges. The in-service training program sought to try out a series of instructional materials designed to upgrade teaching on the higher education level. One of the treatments centered around instructional objectives /1/; the other was designed to review research proposal writing, instructional processes, research methods, and implications of research for developing institutions.

The research development program sought to achieve the following objectives: (1) to develop or advance research competencies in selected personnel on the campuses of the two cooperating colleges through conducting a cooperative research venture; (2) to expose the staffs of each of these colleges to the opportunity to observe and participate in an on-going research project while gaining the benefits of an in-service training experience; (3) to demonstrate the importance of research as a discipline or an instructional method, or as a decision-making instrument, to these two developing institutions; (4) to develop curriculum materials that will aid in the maintenance quality of instruction in developing institutions through in-service programs; and (5) to study the treatment effects of curriculum packages designed to upgrade the instructional processes in higher education.

A two-hour faculty seminar was held every other week in the first semester--at unequal intervals the second semester--at each campus during which the treatments were discussed. The researcher at Memphis State University provided assistance in the administration and development of the curriculum packets and interacted with the consultants who developed them. The group of eight faculty personnel on each campus who received experimental instruction were evaluated each semester by students in one of their classes through two rating instruments: the Purdue Rating Scale for Instruction (01)

[1]This treatment, by Dr. Naim A. Sefein, is being published by the Bureau of Education Research and Services, Memphis State University, under the title Meaningful Instructional Objectives: Their Derivation, Characteristics, and Evaluation.

and the Stanford Teacher Competence Appraisal Guide (02). Also, the Instructional Objectives unit was preceded and followed by a criterion test (03). Using O for the criteria assessment and T_5 (Instructional Objectives) and T_6 (Research Review) for the treatments, the general design for the year was the following:

	Semester 1			Semester 2		
Group 1	$O_1O_2O_3$	T_5	$O_1O_2O_3$	O_1O_2	T_6	O_1O_2
Group 2	$O_1O_2O_3$	T_5	$O_1O_2O_3$	O_1O_2	T_6	O_1O_2

The Instructional Processes Instructor from Memphis State University coordinated the overall instructional program and with the Institutional Researchers administered each of the treatments.

The statistical data of the in-service training program revealed little effect on both rating instruments over both treatments. Significant changes were shown on items when institutional groups were compared, and on faculty members, all of them negative t-values. The lack of change could have been influenced by an inadequate treatment basis, the lack of relationship between the rating instruments and treatments, or the gaining of sophistication by the student raters.

Despite the inadequacy of the results of testing the two packets of curriculum materials, considerations can be made for continuing this program. The Institutional Researchers have expressed a desire to continue the project on a formal or informal basis because of gains in their own research skills and interests. The attitude of the faculty members toward research has been positively influenced and their participation in research-related projects has been increased. Not least, officials in both institutions have expressed an interest in continuing a program of this nature, partly because the Consortium has been a leaven for increasing interest among faculty members not directly involved in the project.

Treatments that could be studied beyond the termination of this program would offer the possibility of significant gains among participating faculty members if knowledge of the contents of the curriculum packet would not be widespread. However, discussing familiar material would offer a beginning point with faculty members new to a continued project. Because faculties would be receptive to studying these treatments, the climate for receptivity to new information and techniques could be established. It is recommended that the in-service program be continued and that the treatment be more specific through the use of more thoroughly developed materials, especially because the participating institutions have no formal programs of teacher improvement.

INTRODUCTION

The cultural lag in the South has created crucial educational needs demanding rapid development of higher education institutions and revision of past educational practices. Lane College and Freed-Hardeman College are two developing institutions in West Tennessee trying to meet these needs with expanding programs. Their plans demand an increase in faculty skills, including those of a research nature.

In these developing institutions, the possession of limited funds presents difficulties in the recruiting of faculty to meet institutional desires and needs. The main route to expansion in research activities taken by these colleges is to develop research competencies in their present faculty members. In-service experiences are needed to aid faculty members in developing not only their potential as research personnel but also their ability in instructional processes and skills.

Development of a continuing in-service program, however, needs research-oriented personnel and released faculty time that can be ill-afforded by these colleges. Although both in-service programs, and programs designed to develop research personnel, are crucial to these institutions, attempted development is not practical without outside support.

As part of an accelerated growth pattern, Memphis State University is participating actively in developing an educational research program. This program, begun in August, 1966, with a grant from the U. S. Office to establish an undergraduate research training program, now includes a permanent, full time staff who assure the continued development of a maturing program in research activity. The West Tennessee Research Development Consortium seeks: (1) to develop research competencies of potential researchers on the campuses of the two colleges through the conduct of a cooperative research venture and through research training; (2) to expose the staffs and students of each of these colleges to opportunities to observe and participate in an on-going research project; (3) to demonstrate the importance of research to developing institutions as a field of endeavor, as a decision--making instrument, and as an instructional method; (4) to develop curriculum materials that will aid in the maintenance quality of instruction in developing institutions through in-service programs; and (5) to study the treatment effects of curriculum packets designed to upgrade instructional processes in higher education, a need virtually unattended.

METHODS

A faculty seminar (composed of eight faculty members selected by the administration of each college) met two hours every two weeks at

each college during the fall semester of the academic year 1969-70. During the second semester, three meetings were held at each of the three cooperating institutions involving all Faculty Curriculum Research Assistants and the Faculty Researchers of each college. Additional meetings were held by each college group at unspecified intervals.

Each faculty was made familiar with the selected evaluative instruments: the Stanford Teacher Competence Appraisal Guide and the Purdue Rating Scale for Instruction. They were made aware that (1) there were no local norms on these instruments; (2) there would be no attempt to compare faculty abilities; (3) ratings of instructional approaches by individual faculty personnel in each group were to be held confidential and returned to each faculty participant upon his request, otherwise individual ratings were made unidentifiable in the calculation of group means; (4) students in the classes of each faculty member provided the ratings on instructional procedures anonymously; and (5) ratings were used only to ascertain the effectiveness of the treatments. After the first meeting of each semester, baseline ratings were made.

The treatments were administered to each group in a pre-test/post-test design during each semester. Following a pre-test/post-test design, the same treatment was administered to each group in the fall semester, another treatment to each group in the spring semester. Each treatment was directed toward specific behavioral goals. The following timetable was followed:

Time	First Semester (both colleges)	Second Semester (both colleges)
1st week	Orientation	Orientation
3rd week	Baseline Data Established, Instructional Objectives Treatment Begun	Baseline Data Established, Research Review Treatment Begun
13th week	Last Criteria Measurement	Last Criteria Measurement
15th week	Analysis, Interpretation and Discussion of Results	Analysis, Interpretation and Discussion of Results

The Instructional Objectives treatment was directed toward the improvement of teaching through an understanding of their derivation, characteristics, and evaluation. During the seminars, the following topics were discussed: specifying instructional systems; derivation of terminal objectives; specifying instructional objectives; classification schemes; relationships among objectives, control, and procedures in instruction; and evaluation and instructional systems.

The Research Review treatment dealt with a review of instructional processes studied during the course of the Consortium, research

methods employed during the same period of time, and implications of the research program for developing institutions. In addition, videotaping was continued as a vehicle for improving classroom performance through technique analysis. Lastly, the materials that the Teaching Research Division of the Oregon State System of Higher Education created for CORD projects were studied. The forty-two packets are divided into nine parts: individually prescribed instruction, ERIC, experimental design, sampling techniques and survey research, proposal writing, the logic of statistics, measurement, evaluation, and testing.

FINDINGS AND ANALYSIS

The Instructional Objectives Treatment

The Instructional Objectives treatment was studied during the first semester by the faculty members at both colleges. Two types of analyses were made on the pre-test/post-test ratings given the teachers by students on the two rating instruments (the Purdue Scale and the Stanford Guide): (1) t-tests on items on each of the scales and on teachers in the groups; and (2) difference score matrices on items and teachers. A comparison of pre-test/post-test scores of each college faculty member on the treatment was also made. The t-tests were made in order to ascertain if there were any significant differences in the treatment; the difference score matrices were constructed in order to observe how individual members changed and on what items.

t-tests. Tables 1 and 2 record the comparison of the difference scores of Lane College teachers with those of Freed-Hardeman College teachers during the first semester. Table 1 shows only one item of statistical significance between the faculties on the Purdue Scale; it is a negative value. Table 2 indicates that two items are significant, both negatively so, on the Stanford Guide.

Tables 3 and 4 record analyses made upon items on the rating scales for the Freed-Hardeman College teachers. They show that there are no significant differences between the pre-test/post-test ratings on either scale. For Lane College teachers, Table 5 records no items with significant differences on the Purdue Scale; Table 6 shows no significant differences on the Stanford Scale.

Tables 7 and 8 indicate analyses made upon Freed-Hardeman Faculty on the two rating scales. Table 7 shows that there is one teacher who registered a significant score--negative--on the Purdue Scale. Table 8, a record of t-value scores on the Stanford Guide, has no significant scores.

Tables 9 and 10 disclose analyses on Lane College faculty on the two rating scales. Table 9 shows that two teachers have significant

t-values, both negative, on the Purdue Scale. Table 10 tells that on the Stanford Guide two teachers have significant t-values, both negative.

Difference Score Matrices. Table 11 reveals that there has been a differential effect by the Instructional Objectives treatment on the Freed-Hardeman College faculty on the Purdue Scale. There are four teacher mean increases and one item mean increase. The differential effect repeats on the Stanford Guide: Table 12 shows that there are six individuals whose means increased and that there are four item mean increases. However, on neither table does the overall mean increase.

On the same treatment involving Lane College faculty, Table 13 depicts that, on the Purdue Scale, there are no item mean increases and no individual mean increases. Three teachers scored negative gains on all items. Table 14 indicates that on the Stanford Guide there are no increases on item means, that two of the eight teachers sustained increases on individual means, and that two others have recorded no changes in their means.

Criterion Test. Table 15 shows a comparison of pre-test and post-test scores of the Freed-Hardeman College faculty on the Instructional Objectives treatment: gain by five teachers, an average of 4.6 for the group. Table 16 depicts scores for the same tests for Lane College faculty. Six teachers have gains; the group has gained an average of 2.4 for each person. Freed-Hardeman College faculty scored an average of 26.5 on the pre-test, 31.1 on the post-test. Lane College faculty scored an average of 20.1 and 22.5, respectively, on the same tests.

The Research Review Treatment

Because only three faculty members from Freed-Hardeman College and none from Lane College had been in the Consortium for the full period, 1967-70, no comparisons were made between individual or group scores attained on the first administration of the scales in the fall of 1967 and those obtained in the last administration in the spring of 1970. Instead, comparisons were made on the data gained from two administrations of the scales conducted in the second semester of 1970 before and after the treatment was studied.

Analyses of data paralleled those made on the other treatment: (1) t-tests on items on each of the scales and on teachers in the groups; and (2) difference score matrices.

t-tests. Tables 17 and 18 depict the comparison of the difference scores of the Lane College teachers during the second semester with those of the Freed-Hardeman College teachers during the same semester on the

TABLE 1

COMPARISON OF DIFFERENCE SCORES USING A t-TEST ON ITEMS OF THE PURDUE RATING SCALE FOR INSTRUCTION, FALL SEMESTER, 1969*

Item	t-value	df	Significance
Interest in Subject	-.51	14	ns
Sympathetic Attitude toward Students	-.92	14	ns
Fairness in Grading	-.32	14	ns
Liberal and Progressive Attitude	-.30	14	ns
Presentation of Subject Matter	-1.55	14	ns
Sense of Proportion and Humor	-1.04	14	ns
Self-reliance and Confidence	-.67	14	ns
Personal Peculiarities	-.84	14	ns
Personal Appearance	-.74	14	ns
Stimulating Intellectual Curiosity	-1.99	14	.05

Levels: $p < .05$ $t > 1.761$

*Difference scores were formed by subtracting the post-test mean student ratings from the pre-test student ratings of each Lane College teacher during the first semester and comparing them with the difference scores for the Freed-Hardeman College teachers during that semester.

TABLE 2

COMPARISON OF DIFFERENCE SCORES USING t-TEST ON ITEMS OF THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE, FALL SEMESTER, 1969*

Item	t-value	df	Significance
Clarity of Aims	-.39	14	ns
Appropriateness of Aims	-2.04	14	ns
Organization of Lesson	-.66	14	ns
Selection of Content	-2.22	14	ns
Selection of Materials	-.81	14	ns
Beginning the Lesson	-.67	14	ns
Clarity of Presentation	-1.60	14	ns
Pacing of the Lesson	-1.28	14	ns
Pupil Participation and Attention	-.07	14	ns
Ending the Lesson	-1.18	14	ns
Teacher-Pupil Rapport	-.98	14	ns
Variety of Evaluative Procedures	.70	14	ns
Use of Evaluation to Improve Teaching and Learning	-1.01	14	ns

Levels: $p < .05$ $t > 1.761$

*Difference scores were formed by subtracting the post-test mean student ratings from the pre-test student ratings of each Lane College teacher during the first semester and comparing them with the difference scores for the Freed-Hardeman College teachers during that semester.

TABLE 3

COMPARISON OF PRE-TEST/POST-TEST SCORES OF FREED-HARDEMAN COLLEGE TEACHERS USING A t-TEST ON ITEMS OF THE PURDUE RATING SCALE FOR INSTRUCTION, FALL SEMESTER, 1969*

Item	t-value	df	Significance
Interest in Subject	-.75	14	ns
Sympathetic Attitude toward Students	-.79	14	ns
Fairness in Grading	-.52	14	ns
Liberal and Progressive Attitude	-.11	14	ns
Presentation of Subject Matter	-.05	14	ns
Sense of Proportion and Humor	-.66	14	ns
Self-reliance and Confidence	-.80	14	ns
Personal Peculiarities	-.23	14	ns
Personal Appearance	-.40	14	ns
Stimulating Intellectual Curiosity	-.07	14	ns

Levels: $p < .05$ $t > 1.761$

*Scores were mean student ratings of each Freed-Hardeman College teacher during the first semester.

TABLE 4

COMPARISON OF PRE-TEST/POST-TEST SCORES OF FREED-HARDEMAN COLLEGE TEACHERS USING A t-TEST ON ITEMS OF THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE, FALL SEMESTER, 1969*

Item	t-value	df	Significance
Clarity of Aims	-.70	14	ns
Appropriateness of Aims	-.66	14	ns
Organization of Lesson	-.72	14	ns
Selection of Content	-.70	14	ns
Selection of Materials	-.63	14	ns
Beginning the Lesson	-.12	14	ns
Clarity of Presentation	-.37	14	ns
Pacing of the Lesson	.45	14	ns
Pupil Participation and Attention	.33	14	ns
Ending the Lesson	-.16	14	ns
Teacher-Pupil Rapport	.63	14	ns
Variety of Evaluative Procedures	-.04	14	ns
Use of Evaluation to Improve Teaching and Learning	.26	14	ns

Levels: $p < .05$ $t > 1.761$

*Scores were mean student ratings of each Freed-Hardeman College teacher during the first semester.

TABLE 5

COMPARISON OF PRE-TEST/POST-TEST SCORES OF LANE COLLEGE TEACHERS USING A t-TEST ON ITEMS OF THE PURDUE RATING SCALE FOR INSTRUCTION, FALL SEMESTER, 1969*

Item	t-value	df	Significance
Interest in Subject	-.89	14	ns
Sympathetic Attitude toward Students	-1.10	14	ns
Fairness in Grading	-.74	14	ns
Liberal and Progressive Attitude	-.98	14	ns
Presentation of Subject Matter	-1.19	14	ns
Sense of Proportion and Humor	-1.08	14	ns
Self-reliance and Confidence	-.63	14	ns
Personal Peculiarities	-.91	14	ns
Personal Appearance	-.42	14	ns
Stimulating Intellectual Curiosity	-1.06	14	ns

Levels: $p < .05$ $t > 1.761$

*Scores were mean student ratings of each Lane College teacher during the first semester.

TABLE 6

COMPARISON OF PRE-TEST/POST-TEST SCORES OF LANE COLLEGE TEACHERS USING A t-TEST ON ITEMS OF THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE, FALL SEMESTER, 1969*

Item	t-value	df	Significance
Clarity of Aims	-.95	14	ns
Appropriateness of Aims	-.88	14	ns
Organization of Lesson	-.57	14	ns
Selection of Content	-.67	14	ns
Selection of Materials	-.86	14	ns
Beginning the Lesson	-.61	14	ns
Clarity of Presentation	-.97	14	ns
Pacing of the Lesson	-.72	14	ns
Pupil Participation and Attention	-.72	14	ns
Ending the Lesson	-.68	14	ns
Teacher-Pupil Rapport	-.56	14	ns
Variety of Evaluative Procedures	-.64	14	ns
Use of Evaluation to Improve Teaching and Learning	-.77	14	ns

Levels: $p < .05$ $t > 1.761$

*Scores were mean student ratings of each Lane College teacher during the first semester.

TABLE 7

t-TEST ON FREED-HARDEMAN COLLEGE FACULTY BY COMPARING PRE-TEST/POST-TEST SCORES ON THE PURDUE RATING SCALE FOR INSTRUCTION, FALL SEMESTER, 1969*

Faculty Member	t-value	df	Significance
51	-3.40	9	.01
56	- .17	9	ns
58	.00	9	ns
61	.08	9	ns
62	.03	9	ns
63	1.02	9	ns
64	- .05	9	ns
65	- .02	9	ns

Level: $p < .05$ $t > 1.833$

*Scores were mean student ratings of each Freed-Hardeman College teacher during the first semester.

TABLE 8

t-TEST ON FREED-HARDEMAN COLLEGE FACULTY BY COMPARING PRE-TEST/POST-TEST SCORES ON THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE, FALL SEMESTER, 1969*

Faculty Member	t-value	df	Significance
51	-.77	12	ns
56	.86	12	ns
58	.29	12	ns
61	.86	12	ns
62	.66	12	ns
63	.47	12	ns
64	.65	12	ns
65	-.31	12	ns

Level: $p < .05$ $t > 1.782$

*Scores were mean student ratings of each Freed-Hardeman College teacher during the first semester.

TABLE 9

t-TEST ON LANE COLLEGE FACULTY BY COMPARING
PRE-TEST/POST-TEST SCORES ON THE PURDUE
RATING SCALE FOR INSTRUCTION
FALL SEMESTER, 1969*

Faculty Member	t-value	df	Significance
05	-2.68	9	.05
09	.36	9	ns
10	-1.96	9	.05
11	- .21	9	ns
14	- .33	9	ns
15	-1.29	9	ns
16	-1.73	9	ns
17	- .70	9	ns

Level: $p < .05$ $t > 1.833$

*Scores were mean student ratings of each Lane College teacher during the first semester.

TABLE 10

t-TEST ON LANE COLLEGE FACULTY BY COMPARING PRE-TEST/POST-TEST SCORES ON THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE FALL SEMESTER, 1969*

Faculty Member	t-value	df	Significance
05	-2.92	12	.01
09	.00	12	ns
10	-2.39	12	.05
11	.00	12	ns
14	.08	12	ns
15	- .75	12	ns
16	-1.05	12	ns
17	.23	12	ns

Level: $p < .05$ $t > 1.782$

*Scores were mean student ratings of each Lane College teacher during the first semester.

TABLE 11

DIFFERENCE SCORES MATRIX FOR THE PURDUE RATING SCALE FOR INSTRUCTION FOR FREED-HARDEMAN COLLEGE, FALL SEMESTER, 1969*

Teacher	1	2	3	4	5	6	7	8	9	10	Total
51	-	-	-	-	+	-	-	-	-	-	-
56	+	-	-	-	+	-	+	+	-	-	+
58	-	-	+	+	+	+	+	+	-	-	0
61	+	-	+	-	+	+	-	+	-	-	+
62	+	+	+	+	0	-	+	+	+	-	+
63	-	-	+	+	+	+	+	+	-	+	+
64	+	+	-	-	+	+	+	-	+	-	-
65	+	+	-	+	+	+	+	-	-	-	-
Mean	-	-	-	+	-	-	-	-	-	-	-

*Difference scores were formed by subtracting the pre-test mean student rating from the post-test rating of each Freed-Hardeman College teacher during the first semester. The +'s, -'s, and 0's indicate an increase, decrease, or no change, respectively, from pre-test to post-test.

TABLE 12

DIFFERENCE SCORES MATRIX FOR THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE FOR FREED-HARDEMAN COLLEGE, FALL SEMESTER, 1969*

Teacher	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
51	-	+	-	-	-	+	-	+	-	-	-	-	-	-
56	+	+	+	+	+	+	+	+	+	+	-	+	+	+
58	+	+	-	+	+	-	+	+	-	+	+	-	+	+
61	+	+	+	+	+	+	+	+	+	+	+	+	+	+
62	+	+	+	+	+	+	+	+	-	+	+	+	+	+
63	+	+	+	+	+	+	+	+	+	+	+	+	+	+
64	+	+	+	+	+	+	+	+	+	+	+	+	+	+
65	+	+	-	-	-	+	+	-	-	0	+	-	-	-
Mean	-	+	-	-	-	-	-	+	+	-	-	-	+	-

*Difference scores were formed by subtracting the pre-test mean student ratings from the post-test ratings of each Freed-Hardeman College teacher during the first semester. The +'s, -'s, and 0's indicate an increase, decrease, or no change, respectively, from pre-test to post-test.

TABLE 13

DIFFERENCE SCORES MATRIX FOR THE PURDUE RATING SCALE FOR INSTRUCTION FOR LANE COLLEGE, FALL SEMESTER, 1969*

Teacher	1	2	3	4	5	6	7	8	9	10	Total
05	-	-	-	-	-	-	-	-	-	-	-
09	-	-	-	-	-	+	-	+	-	-	-
10	-	-	-	-	-	-	-	-	+	-	-
11	+	-	+	-	-	+	+	-	-	-	-
14	-	-	-	-	+	-	-	-	+	+	-
15	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-
17	+	-	+	-	+	+	-	+	0	-	-
Mean	-	-	-	-	-	-	-	-	-	-	-

*Difference scores were formed by subtracting the pre-test mean student ratings from the post-test ratings of each Lane College teacher during the first semester. The +'s, -'s, and 0's indicate an increase, decrease, or no change, respectively, from pre-test to post-test.

TABLE 14

DIFFERENCE SCORES MATRIX FOR THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE FOR LANE COLLEGE, FALL SEMESTER, 1969*

Teacher	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09	-	-	+	-	-	+	-	+	-	-	+	+	+	0
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	+	-	-	-	-	+	+	+	0	+	+	0
14	-	+	-	+	-	+	-	-	-	+	+	-	-	+
15	-	+	-	-	-	-	-	-	-	+	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	+	+	+	+	-	+	+	+	+	+	+	+
Mean	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Difference scores were formed by subtracting the pre-test mean student ratings from the post-test ratings of each Lane College teacher during the first semester. The +'s, -'s, and 0's indicate an increase, decrease, or no change, respectively from pre-test to post-test.

TABLE 15

COMPARISON OF PRE-TEST/POST-TEST SCORES OF THE FREED-HARDEMAN COLLEGE FACULTY ON THE INSTRUCTIONAL OBJECTIVES TREATMENT, FALL SEMESTER, 1969

Faculty Member	Scores		Gain (Loss) on Post-test
	Pre-test	Post-test	
51	27	20	(7)
56	24	32	8
58	40	37	(3)
61	24	34	10
62	29	27	(2)
63	21	30	9
64	18	37	19
65	29	32	3
Mean	26.5	31.1	4.6

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TABLE 16

COMPARISON OF PRE-TEST/POST-TEST SCORES OF LANE COLLEGE FACULTY ON THE INSTRUCTIONAL OBJECTIVES TREATMENT, FALL SEMESTER, 1969

Faculty Member	Scores		Gain (Loss) on Post-test
	Pre-test	Post-test	
05	17	21	4
09	18	21	3
10	26	17	(9)
11	26	31	5
14	15	24	9
15	23	26	3
16	18	13	(5)
17	18	27	9
Mean	20.1	22.5	2.4

TABLE 17

COMPARISON OF DIFFERENCE SCORES USING A t-TEST ON ITEMS OF THE PURDUE RATING SCALE FOR INSTRUCTION, SPRING SEMESTER, 1970*

Item	t-value	df	Significance
Interest in Subject	-.28	14	ns
Sympathetic Attitude toward Students	-.45	14	ns
Fairness in Grading	.14	14	ns
Liberal and Progressive Attitude	-.75	14	ns
Presentation of Subject Matter	-.56	14	ns
Sense of Proportion and Humor	.13	14	ns
Self-reliance and Confidence	-1.00	14	ns
Personal Peculiarities	.40	14	ns
Personal Appearance	-.65	14	ns
Stimulating Intellectual Curiosity	-1.10	14	ns

Levels: $p < .05$ $t > 1.761$

*Difference scores were formed by subtracting the post-test mean student rating from the pre-test student rating of each Lane College teacher during the second semester and comparing them with the difference scores for the Freed-Hardeman College teachers during that semester.

TABLE 18

COMPARISON OF DIFFERENCE SCORES USING A t-TEST ON ITEMS OF THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE, SPRING SEMESTER, 1970

Item	t-value	df	Significance
Clarity of Aims	- .63	14	ns
Appropriateness of Aims	1.05	14	ns
Organization of Lesson	.33	14	ns
Selection of Content	- .21	14	ns
Selection of Materials	.25	14	ns
Beginning the Lesson	- .12	14	ns
Clarity of Presentation	-1.04	14	ns
Pacing of the Lesson	- .51	14	ns
Pupil Participation and Attention	- .69	14	ns
Ending the Lesson	.27	14	ns
Teacher-Pupil Rapport	1.16	14	ns
Variety of Evaluative Procedures	.76	14	ns
Use of Evaluation to Improve Teaching and Learning	.07	14	ns

Levels: $p < .05$ $t > 1.761$

*Difference scores were formed by subtracting the post-test mean student ratings from the pre-test student ratings of each Lane College teacher during the second semester and comparing them with the difference scores for the Freed-Hardeman College teachers during that semester.

Purdue Scale and Stanford Guide. On neither table are there items of significance.

Tables 19 and 20 show the analyses of the Freed-Hardeman College teachers on items on the rating scales. Table 19 records that no items of negative significance are found on the Purdue Scale; Table 20 points out that there are no significant differences on the Stanford Guide. Tables 21 and 22 disclose the analyses of the Lane College faculty on items on the rating scales. Table 21 reveals no significant differences on the Purdue Scale; Table 22 shows no significant differences on items on the Stanford Guide.

Tables 23 and 24 depict t-values made on the Freed-Hardeman College faculty on the two rating scales. Table 23 shows that on the Purdue Scale one t-value is of significance; it is negative. Table 24 shows that on the Stanford Guide no t-values are found to be significant.

Tables 25 and 26 disclose analyses made on all the Lane College faculty on the same scales. On Table 25, one teacher has a t-value of significance on the Purdue Scale, that being negative. Table 26 reveals that on the Stanford Scale one faculty t-value is of significance, that also being negative.

Difference Score Matrices. Table 27 shows the difference score matrix for the Freed-Hardeman College group for the Purdue Scale. The group means did not increase on any item. Three faculty members have a mean increase, while one other shows no change. One member has a negative gain on all items. Table 28, the matrix of the Freed-Hardeman group for the Stanford Guide, shows a scattering of increases among six members of the group, i.e., one item mean increase and four faculty mean increases. This indicates a differential effect for this group.

For the Lane College faculty, the matrix on the Purdue Scale, seen in Table 29, relates that there is one item mean increase; three teachers have mean increases. Two faculty members have negative gains on all items. Table 30, the matrix for the Stanford Guide, indicates improvement among four individuals while three people show severely negative changes. There are no increases on item means; but on the means of five individuals, there are positive changes, a further indication of a differential effect.

Frequency of Significant t-value Scores on Both Treatments

Another method of analyzing the data is presented in Tables 31 and 32, which depict the frequency of t-value scores that are either negatively or positively significant. Table 31 states that there are three instances of significant t-values, all negative, when the difference scores of the faculty groups of the two colleges are compared on the items on the two scales. Table 32 depicts the frequency of significant t-values for teachers. During the year, there were eight instances of significant values, all of them negative, involving five different teachers. There are no instances of significant values on items on either scale by any member of a faculty group.

TABLE 19

COMPARISON OF PRE-TEST/POST-TEST SCORES OF FREED-HARDEMAN COLLEGE TEACHERS USING A t-TEST ON ITEMS OF THE PURDUE RATING SCALE FOR INSTRUCTION, SPRING SEMESTER, 1970*

Item	t-value	df	Significance
Interest in Subject	- .40	14	ns
Sympathetic Attitude toward Students	- .66	14	ns
Fairness in Grading	- .19	14	ns
Liberal and Progressive Attitude	- .34	14	ns
Presentation of Subject Matter	- .23	14	ns
Sense of Proportion and Humor	- .19	14	ns
Self-reliance and Confidence	- .22	14	ns
Personal Peculiarities	- .23	14	ns
Personal Appearance	- .11	14	ns
Stimulating Intellectual Curiosity	- .45	14	ns

Levels: $p < .05$ $t > 1.761$

*Scores were mean student ratings of each Freed-Hardeman College teacher during the second semester.

TABLE 20

COMPARISON OF PRE-TEST/POST-TEST SCORES OF FREED-HARDEMAN COLLEGE TEACHERS USING A t-TEST ON ITEMS OF THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE, SPRING SEMESTER, 1970*

Item	t-value	df	Significance
Clarity of Aims	- .20	14	ns
Appropriateness of Aims	.03	14	ns
Organization of Lesson	- .13	14	ns
Selection of Content	- .04	14	ns
Selection of Materials	- .06	14	ns
Beginning the Lesson	- .07	14	ns
Clarity of Presentation	- .12	14	ns
Pacing of the Lesson	- .01	14	ns
Pupil Participation and Attention	- .14	14	ns
Ending the Lesson	- .21	14	ns
Teacher-Pupil Rapport	- .07	14	ns
Variety of Evaluative Procedures	- .06	14	ns
Use of Evaluation to Improve Teaching and Learning	- .15	14	ns

Levels: $p < .05$ $t > 1.761$

*Scores were mean student ratings of each Freed-Hardeman College teacher during the second semester.

TABLE 21

COMPARISON OF PRE-TEST/POST-TEST SCORES OF LANE COLLEGE TEACHERS USING A t-TEST ON ITEMS OF THE PURDUE RATING SCALE FOR INSTRUCTION, SPRING SEMESTER, 1970*

Item	t-value	df	Significance
Clarity of Aims	- .44	14	ns
Sympathetic Attitude toward Students	- .76	14	ns
Fairness in Grading	- .69	14	ns
Liberal and Progressive Attitude	.05	14	ns
Presentation of Subject Matter	- .44	14	ns
Sense of Proportion and Humor	- .21	14	ns
Self-reliance and Confidence	- .68	14	ns
Personal Peculiarities	- .25	14	ns
Personal Appearance	- .35	14	ns
Stimulating Intellectual Curiosity	- .18	14	ns

Levels: $p < .05$ $t > 1.761$

* Scores were mean student ratings of each Lane College teacher during the second semester.

TABLE 22

COMPARISON OF PRE-TEST/POST-TEST SCORES OF LANE COLLEGE TEACHERS USING A t-TEST ON ITEMS OF THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE, SPRING SEMESTER, 1970*

Item	t-value	df	Significance
Clarity of Aims	-1.22	14	ns
Appropriateness of Aims	- .68	14	ns
Organization of Lesson	-1.12	14	ns
Selection of Content	- .97	14	ns
Selection of Materials	-1.03	14	ns
Beginning the Lesson	- .27	14	ns
Clarity of Presentation	- .66	14	ns
Pacing of the Lesson	- .09	14	ns
Pupil Participation and Attention	- .40	14	ns
Ending the Lesson	- .43	14	ns
Teacher-Pupil Rapport	- .99	14	ns
Variety of Evaluative Procedures	- .56	14	ns
Use of Evaluation to Improve Teaching and Learning	- .12	14	ns

Levels: $p < .05$ $t > 1.761$

*Scores were mean student ratings of each Lane College teacher during the second semester.

TABLE 23

t-TEST ON FREED-HARDEMAN COLLEGE FACULTY BY COMPARING PRE-TEST/POST-TEST SCORES ON THE PURDUE RATING SCALE FOR INSTRUCTION, SPRING SEMESTER, 1970*

Faculty Member	t-value	df	Significance
51	- .97	9	ns
56	1.03	9	ns
58	- .59	9	ns
61	- .32	9	ns
62	.55	9	ns
63	-3.26	9	.01
64	.14	9	ns
65	.00	9	ns

Level: $p < .05$ $t > 1.833$

* Scores were mean student ratings of each Freed-Hardeman College teacher during the second semester.

TABLE 24

t-TEST ON FREED-HARDEMAN COLLEGE FACULTY BY COMPARING PRE-TEST/POST-TEST SCORES ON THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE, SPRING SEMESTER, 1970*

Faculty Member	t-value	df	Significance
51	- .26	12	ns
56	1.26	12	ns
58	- .07	12	ns
61	.21	12	ns
62	.58	12	ns
63	- .29	12	ns
64	.35	12	ns
65	- .25	12	ns

Level: $p < .05$ $t > 1.782$

* Scores were mean student ratings of each Freed-Hardeman teacher during the second semester.

TABLE 25

t-TEST ON LANE COLLEGE FACULTY BY COMPARING PRE-TEST/POST-TEST SCORES ON THE PURDUE RATING SCALE FOR INSTRUCTION, SPRING SEMESTER, 1970*

Faculty Member	t-value	df	Significance
05	1.09	9	ns
09	- .85	9	ns
10	.43	9	ns
11	.74	9	ns
14	- .46	9	ns
15	1.08	9	ns
16	-3.24	9	ns
17	-1.11	9	ns

Level: $p < .05$ $t > 1.833$

* Scores were mean student ratings of each Lane College teacher during the second semester.

TABLE 26

t-TEST ON LANE COLLEGE FACULTY BY COMPARING PRE-TEST/POST-TEST SCORES ON THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE, SPRING SEMESTER, 1970*

Faculty Member	t-value	df	Significance
05	.04	12	ns
09	-1.29	12	ns
10	.80	12	ns
11	.42	12	ns
14	- .98	12	ns
15	.44	12	ns
16	-4.05	12	ns
17	- .26	12	ns

Level: $p < .05$ $t > 1.782$

* Scores were mean student ratings of each Lane College teacher during the second semester.

TABLE 27

DIFFERENCE SCORES MATRIX FOR THE PURDUE RATING SCALE FOR INSTRUCTION FOR FREED-HARDEMAN COLLEGE, SPRING SEMESTER, 1970*

Teacher	1	2	3	4	5	6	7	8	9	10	Total
51	-	-	-	+	-	+	-	-	-	+	-
56	+	+	+	+	+	+	-	+	+	+	+
58	-	-	-	-	+	+	-	-	+	-	-
61	-	-	0	-	+	-	-	-	-	-	-
62	-	+	+	+	-	+	+	+	0	-	+
63	-	-	-	-	-	-	-	-	-	-	-
64	+	-	+	-	+	+	0	+	+	-	+
65	+	+	+	+	-	+	-	-	-	-	0
Mean	-	-	-	-	-	-	-	-	-	-	-

*Difference scores were formed by subtracting the pre-test mean student ratings from the post-test ratings of each Freed-Hardeman College teacher during the second semester. The +'s, -'s, and 0's indicate an increase, decrease, or no change, respectively, from pre-test to post-test.

TABLE 28

DIFFERENCE SCORES MATRIX FOR THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE FOR FREED-HARDEMAN COLLEGE, SPRING SEMESTER, 1970*

Teacher	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
51	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56	+	+	+	+	-	+	+	+	+	+	+	-	+	+
58	-	+	-	+	+	+	-	-	+	-	-	-	-	-
61	+	+	-	+	+	+	+	+	+	-	+	-	+	+
62	-	+	+	-	+	+	-	-	-	+	+	+	+	+
63	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64	+	+	+	+	+	+	-	+	-	+	+	+	-	+
65	-	-	-	-	-	-	+	-	-	-	+	+	+	-
Mean	-	+	-	-	-	-	-	-	-	-	-	-	-	-

*Difference scores were formed by subtracting the pre-test mean student ratings from the post-test ratings of each Freed-Hardeman College teacher during the second semester. The +'s and -'s indicate an increase or decrease, respectively, from pre-test to post-test.

TABLE 29

DIFFERENCE SCORES MATRIX FOR THE PURDUE RATING SCALE FOR INSTRUCTION FOR LANE COLLEGE, SPRING SEMESTER, 1970*

Teacher	1	2	3	4	5	6	7	8	9	10	Total
05	-	-	-	-	-	-	-	-	-	-	-
09	-	+	-	+	-	+	-	-	-	-	-
10	-	-	+	+	+	+	+	-	+	+	+
11	+	+	+	+	+	+	+	-	+	+	+
14	-	+	+	-	-	-	-	-	-	-	-
15	+	+	+	+	+	+	+	-	+	+	+
16	-	-	-	-	-	-	-	-	+	-	-
17	-	-	-	-	-	-	-	-	-	-	-
Mean	-	-	-	+	-	-	-	-	-	-	-

*Difference scores were formed by subtracting the pre-test mean student ratings from the post-test ratings of each Lane College teacher during the second semester. The +'s and -'s indicate an increase or decrease, respectively, from pre-test to post-test.

TABLE 30

DIFFERENCE SCORES MATRIX FOR THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE FOR LANE COLLEGE, SPRING SEMESTER, 1970*

Teacher	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
05	-	+	-	-	+	-	-	+	-	+	+	+	+	+
09	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	+	+	+	+	+	+	+	+	+	+	+	+	+	+
11	-	+	-	-	-	+	+	-	+	+	+	+	+	+
14	-	+	-	-	-	-	-	-	-	-	-	-	-	-
15	+	+	+	+	-	+	+	+	-	+	+	+	-	+
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	+	-	+	-	-	+	-	-	-	+	-	+	+	+
Mean	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Difference scores were formed by subtracting the pre-test mean student rating from the post-test ratings of each Lane College teacher during the second semester. The +'s and -'s indicate an increase or decrease, respectively, from pre-test to post-test.

TABLE 31

FREQUENCY OF SIGNIFICANT t-VALUE SCORES ON ITEMS WHEN COMPARING FREED-HARDEMAN COLLEGE AND LANE COLLEGE DIFFERENCE SCORES ON THE PURDUE RATING SCALE FOR INSTRUCTION AND THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE, 1969-1970

Purdue Scale		Stanford Guide	
Semester	Number of Significant Items	Semester	Number of Significant Items
Fall	1 negative	Fall	none
Spring	2 negative	Spring	none

TABLE 32

FREQUENCY OF SIGNIFICANT t-VALUE SCORES OF TEACHERS OF FREED-HARDEMAN COLLEGE AND LANE COLLEGE ON THE PURDUE RATING SCALE FOR INSTRUCTION AND THE STANFORD TEACHER COMPETENCE APPRAISAL GUIDE, 1969-1970

Freed-Hardeman College

Purdue Scale		Treatment	Stanford Guide	
Semester	Number of Significant Teachers		Semester	Number of Significant Teachers
Fall	2 negative	Instructional Objectives	Fall	
Spring	1 negative	Research Review	Spring	1 negative

Lane College

Purdue Scale		Treatment	Stanford Guide	
Semester	Number of Significant Teachers		Semester	Number of Significant Teachers
Fall	2 negative	Instructional Objectives	Fall	2 negative
Spring	1 negative	Research Review	Spring	1 negative

CONCLUSIONS AND RECOMMENDATIONS

There are only a few instances of significant differences--all of them negative--on the two rating scales when comparing the difference scores of the faculty groups of the two institutions, not when comparing item means. There are a few instances of significance in the two rating scales involving teachers, all of them negative values. It is not possible to identify statistically those items that contributed to the significance except on a cumulative, or overall, basis.

The lack of positively significant values could be attributed to an inadequate treatment basis in either of the two semesters. The instructional objectives unit had a relevance to behavior in the classroom and could have contributed to the improvement of teaching in a direct manner. However, the research review treatment was more appropriate for extra-classroom activities, that is, proposal writing and personalized study for faculty members. Contrariwise, the video-taping sessions offered immediate feedback for the improvement of classroom techniques.

There also could exist a lack of relationship between the measurement instruments and the treatments. Ideally, the instruments used should have measured the students' reactions to specified aspects of the treatments. The most accurate measures of the effect of the treatment were the criterion tests (pre-test and post-tests) taken by the faculty members over the content of the instructional objectives unit.

Further, the data could have been contaminated by contravening influences impinging on the treatment. However, the design employed was intended to offset any threats to validity caused by history, maturation, testing, instrumentation, regression, selection, mortality, and the interaction of testing and the treatment. Also, the perceptions of the raters could have improved between the first and last administrations of the instruments each semester. Familiarity with them and the removal of the possibility of threat to the rater could have influenced more realistic choices and counteracted any halo effect present in early administrations.

Although the results indicate that the instructional treatments made little noticeable difference, there is adequate reason to continue the application of methodologies because a need exists for the constant in-service training of instructors in institutions of higher learning. Such training has long range results often not immediately seen in class performances. There is also a crucial need for the training of research personnel in developing colleges. The continuance of a program of this nature should raise the probability that a high quality of instructional research will take place on these campuses to improve instructional production. The benefits of a long range program are most evident in the development of adequately trained personnel to carry out instructional research, the increased interest of faculty members to participate in research, and the development of a structure through which research can take place.

A revision of treatment for any additional continuance could center around making the instructional treatment segments more specifically related to attempts to secure more significant results. The instructional treatment could focus upon topics not generally studied by faculty members of higher educational institutions. However, a starting point could be with material with which they are familiar. This choice would be considered sound because the basic strategy would be to revitalize an interest in already used teaching techniques and, thereby, create a climate of acceptance for treatments related to newly emerging knowledge. The microteaching procedure could again be used as an instructional technique to establish communication levels and realistic classroom objectives.

It is recommended that additional time be given to this program, especially since none of the participating institutions has formal in-service programs of teacher improvement. The officials of the participating colleges, the Faculty Researchers and the Faculty Curriculum Research Assistants of Freed-Hardeman College and Lane College, and members of the Bureau of Educational Research and Services at Memphis State University are desirous of continuing the research project on either a formal or informal basis. Plans have been made to provide for group meetings of former participants to study pertinent research-related methods and techniques, to discuss funded programs and proposal writing related to the securing of programs, and to share knowledge gained through research completed by faculty members of the participating institutions. Such meetings will also involve other members of each faculty not previously related to the Consortium on a participating basis.